

Qualified Reclamation Practitioners in Alberta*

David Lloyd, P.Ag., Alberta Environment

Currently, no specific educational training or experience is required for individuals to practice reclamation in Alberta. This means that individuals with a wide range of training and experience are working in the reclamation field. Various industries have advised that the success of reclamation programs meeting specified criteria is variable. It is generally believed that a base set of practitioner qualifications will help to enhance reclamation success in the field and better ensure compliance with reclamation legislation in the province of Alberta (EBA, 1998).

A Alberta committee made up of members from five different professional bodies has been working for 3 years to develop certification criteria for reclamation practitioners and to propose an administration system that would run the certification program. The Alberta Institute of Agrologists initiated the review by asking David Lloyd to form a working team made up of members from other professional bodies. The Engineers, Foresters, Biologists, Agrologists, Alberta Environment (initially) and the Canadian Land Reclamation Association subsequently formed a working group to develop a draft certification process and criteria for individuals practicing reclamation in Alberta. The working group developed a vision, mission and a guiding set of “principles” to focus their work. These were:

VISION:

The establishment of qualifications for land reclamation practitioners to ensure high standards of land reclamation practice.

MISSION:

To oversee the development and design of basic qualifications for land reclamation practitioners in Alberta and to recommend an operating framework for use of these qualifications

GUIDING PRINCIPLES

Diversity of qualification	Flexibility
National mobility	Voluntary process
Consensus decision in design	Explicit standards
Satisfy affected stakeholders	
Multidiscipline inclusion – experience and education	

* Presented at the 24th Annual Meeting of the Canadian Land Reclamation Association held jointly with the Saskatchewan Environmental Industry and Managers Association, Saskatoon, Saskatchewan, September 28-30, 1999.

To assist the working group, a consulting firm, EBA Engineering, was hired in 1997 to suggest a minimum education and training background for individuals working in reclamation. The consultant was asked to propose an administrative system that would oversee and run the certification process. EBA submitted a report in 1998 recommending a base set of educational and experiential criteria which any individual should have when working in the reclamation field. EBA also conducted a telephone survey of various parties to determine general response to certification. There was a significant amount of support for certification from the 74 respondents of the survey. There were also many reservations about how certification could be meaningfully and fairly implemented, and appropriately address the wide range of knowledge, skills, training and experience required in the diverse conditions in Alberta (EBA, 1998).

Some survey results were:

73% surveyed believed some individuals were not able to carry out reclamation work to adequate standards

92% felt voluntary minimal qualifications would be beneficial for people doing formal site assessments; 82% for people doing on-site supervision; 93% for government inspections and 66% for reclamation management.

53% were in favour of at least a 2 year college education

46% favoured a 1-2 years work experience

35% favoured > 2 years education

68% favoured a practicum

The consultant suggested 3 possible administrative processes to run a certification program. The working group followed up EBA's report by pursuing one of these options. The Canadian Council Human Resources in the Environment Industry (CCHREI) was approached to determine if they would administer a certification program for land reclamation practitioners. Subsequent to the meeting with CCHREI, the working group decided that a "formal" certification program was not in the best interests of affected parties. The working group proposed that a qualification criteria for land reclamation practitioners would be "voluntarily endorsed" by each of the associations/professions as a definition of what experience/training an individual needs to practice land reclamation. If an industry desires an experienced, trained individual for reclamation work, then the professional/technical organizations may indicate to that industry the qualifications they have endorsed for individuals who practice in this area. At this time it is clearly intended that there be NO formal certification requirement established for qualified land reclamation practitioners. The original working group has tabled a draft certification criteria for discussion purposes to their respective organizations. The draft criteria will be used as a template for further work. A summary of the proposed criteria is listed in Tables 1&2 below.

TABLE I - SUGGESTED TECHNICAL EDUCATION (EBA, 1998)

Subject Requirements	Rationale
Terrain Science • introduction to landforms • introduction to surficial deposits	• enhance understanding of landscape/soil relationships • understanding of erosion potential • recontouring landscapes and reestablishment of natural drainage patterns in reclamation
Soil Science • introduction to soil properties (physical, chemical, biological) • introduction to soil quality/capability? • introduction to soil classification	• ability to understand/assess predisturbance or adjacent soil properties • understand/assess soil quality and equivalent capability • understand soil/landscape relationships ability to comment on appropriate amendments and protection measures • understanding of soil conditions to assist in selecting suitable revegetation program
Plant Science • introduction to plant growth • introductory ecology – forest and grassland communities • introductory range management • introduction to weed identification and control • introduction to revegetation	• understand and create conditions favourable for plant growth and therefore develop suitable revegetation programs • selection of appropriate species, seeding procedures, and promotion of conditions for reestablishment of native vegetation • ability to assess success of revegetation program and relate to pre-disturbance condition or adjacent land base • weed control and adaptive management as required
Reclamation • introduction to equipment (farming equipment, construction and reclamation equipment etc.) • introduction to processes (eg. Seeding, farming practices erosion control, etc.) • soil amendments • criteria • understanding construction and operation practices	• necessary knowledge to develop and/or supervise a reclamation program **question – does this need to be a course or something that is acquired via experience – many practitioners would not be qualified in this area without specifically going through a reclamation program at school but they may have all the good tools to become excellent practitioners
Regulatory Regime • AEPEA • Relevant guidelines	• practitioners must understand the requirements to ensure final product is suitable ** same comment as above – this is easily something to be acquired in the field – regulations and requirements change so courses at school would be beneficial but not essential
Aerial photography interpretation Map Reading	• skills are essential to the practical aspect of working in the industry
Recommended Subjects: • Ecology • Wildlife • agriculture (various courses) • chemistry	

TABLE II - SUGGESTED EXPERIENCE (EBA, 1998)

Experience/Skill	Rationale
Terrain and Soil • assess soil properties in field (eg. Texture, structure, etc.) • relate changes in undisturbed soil to landscape position • ID soil horizons, ID soil to subgroup level • Recognize disturbed soil and effect on soil properties and soil quality • Recognize and assess problem soil properties and relate to natural conditions, construction activities and reclamation needs • Ability to determine corrective measures • Recognize presence of contaminants, sample appropriately • ID and assess site drainage and soil moisture problems • Ability to assess appropriateness of soil amendments and quality of organic material	• these skills are required to correctly assess pre construction, pre reclamation and post reclamation conditions; develop a reclamation plan, supervise reclamation, etc.
Vegetation • assess vegetation growth and vigour for annual crops, forage and natives • ID species determine seed appropriate for revegetation –based on site conditions • ID weeds and determine appropriate control measures • Assess revegetation success and trouble shoot to address problems	• these skills are required to correctly assess pre construction, pre reclamation and post reclamation conditions; develop a reclamation plan, supervise reclamation, etc.
Reclamation • familiarity with construction, reclamation and revegetation procedures (eg. Stripping, decompaction, seedbed prep.) • familiarity with equipment, its effect on soil, its appropriateness under site and weather conditions • costing of reclamation programs • recognize contaminants • determine appropriate landscape for drainage, erosion control, etc. • familiar with farming systems	• these skills are required to correctly assess pre construction, pre reclamation and post reclamation conditions; develop a reclamation plan, supervise reclamation, etc
Regulatory Regime • assess sites to meet criteria	• ensure compliance

The working group has determined that further consultation is needed with other professional bodies and with the consulting industry. The original working group has proposed that the existing committee be expanded to include new working members. The new members will consist of at least the following:

- 4 members from the consulting industry
- Forest Technologists
- Engineering Technologists
- Landscape Architects
- Members from the original working group organizations (Agrologists, Foresters, Biologists, CLRA and Engineers).

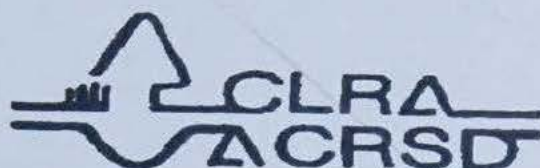
Meetings are ongoing with individuals from each of the above groups. The expanded working group will work toward developing a more complete set of educational/experience guidelines for reclamation practitioners. A reclamation certification criteria draft document, endorsed by the working group, will then be submitted to each organization for review and comment.. Each organization will then decide how they want to pursue any form of specialization/certification process.

References

1. EBA, Investigation into the Development of Certification For Land Reclamation Practitioners in Alberta. A Report Submitted to the Qualified Reclamation Land Reclamation Practitioners Working Group, Edmonton, Alberta, April, 1998.

Perspectives in Land Reclamation and Restoration

Presented by:



Canadian Land Reclamation Association/
Association Canadienne De Réhabilitation Des Sites Dégradés



Including the Canadian Land Reclamation Association's
24th Annual Meeting

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Conference Program / Table of Contents

Monday, September 27th

7:00 - 9:00 Registration Booth Open

Tuesday, September 28th

7:15 - 7:45 AM Registration

7:45 - 8:00 AM Bus Loading from Saskatoon Inn Lobby

8:00 AM Field Tour Departure (no delays)

7:00 - 10:00 PM Wine and Cheese, Registration

Wednesday, September 29th

Page #

7:30 Registration

8:00 - 8:05 Introductory Remarks – Saskatchewan Room ‘B’
Tracy Patterson (CLRA) and Theresa Salamone (SEIMA) n/a

8:05 – 8:25 Opening remarks from Saskatchewan Environment and
Resource Management n/a

8:25 – 10:05 Saskatchewan Policy – Saskatchewan Room ‘B’
Session Chair: Lorne Veitch – Saskatchewan Agriculture and
Food, Lands Branch, Swift Current

8:25 – 8:45 Drilling waste management guidelines.
Todd Han, Saskatchewan Energy and Mines..... n/a

8:45 – 9:05 Saskatchewan upstream petroleum sites remediation guidelines.
Todd Han, Saskatchewan Energy and Mines..... n/a

9:05 – 9:25 Surface lease policy and seismic activity on agricultural Crown
Lands.
Wilf Pyle, Saskatchewan Agriculture and Food 2

9:25 – 9:45 Lease conditions and restoration criteria on Saskatchewan
Agriculture and Food Crown Land.
Todd Jorgenson, Saskatchewan Agriculture and Food 12

9:45 – 10:05 Environmental liability and contaminated site management in
Saskatchewan.
Victor Chang, Saskatchewan Environment and Resource
Management 14

10:05 – 10:30 Refreshments

10:30 – 12:10 Concurrent Sessions

Session A: Remediation – Saskatchewan Room 'A'

Session Chair: Darlene Howat – Department of Renewable Resources, University of Alberta

- 10:30 – 10:50 Bioremedial options.
Allan Jobson, StanTec..... 46
- 10:50 – 11:10 In-situ biodegradation of ethanol-amine in low permeability soils.
Stuart Lunn and Ron Goodman, Esso..... 48
- 11:10 – 11:30 Yield and nutrient uptake of wheat on oil well sites: effects of topsoil depth and organic amendments
Akinremi, O.O., Lethbridge Research Centre; F.J. Larney, Semi-Arid Prairie Agriculture Research Station; R.L. Lemke, Semi-Arid Prairie Agriculture Research Station; and V. Klaassen, PanCanadian Petroleum Ltd..... 161
- 11:30 – 11:50 Investigation of microbial bioremediation in a gold mill tailings pond.
Carl Paton, Cameco Corporation and Ram D. Mehta, Prairie Biological Research Ltd. 71
- 11:50 – 12:10 Use of crop selection and cattle manure to bioremediate a heavy oil-polluted loamy sand for grain production.
Bix Biederbeck, Agriculture and Agri-Food Canada..... 82

Session B: Revegetation and the ESSA – Saskatchewan Room 'C'

Session Chair: Suzanne Gill – Alberta Agriculture, Food, and Rural Development, Public Lands Branch

- 10:30 – 10:50 Native prairie revegetation on wellsites in southeastern Alberta.
Etienne Soloudre and M. Anne Naeth, and Andy Hammermeister, University of Alberta..... 106
- 10:50 – 11:10 Vegetation characteristics on a pipeline right-of-way twelve years after construction in Southern Alberta.
Kelly Ostermann, University of Alberta 109
- 11:10 – 11:30 Bioengineering and reclamation to stabilize a lakeshore slope.
Jim Schaefer, University of Alberta..... 112
- 11:30 – 11:50 Restoration based on ecological function: grazing management in an endangered Australian ecosystem.
Kim Allcock, David Board, David Hik, Alan Newsome, Roger Pech CSIRO Wildlife and Ecology, Australia, and University of Alberta..... 146
- 11:50 – 12:10 Employment Futures: What does Environmental Science Student Association have to offer?
Margaret Wilson, University of Saskatchewan..... 157

12:10 – 1:45 **Lunch** -- Saskatchewan Room 'B'

1:45 – 3:25 **Concurrent Sessions**

Session C: Native Plants and Revegetation – Saskatchewan Room 'A'
Session Chair: Anne Naeth – Department of Renewable
Resources, University of Alberta

1:45 - 2:05 Relative performance of native prairie grasses and forbs for
revegetation of a pipeline disturbance on native prairie.
David Walker, Walker and Associates..... 126

2:05 – 2:25 Revegetation of wellsite disturbances on Fescue Prairie in east-
central Alberta.
Jay Woosaree, Alberta Research Council..... 118

2:25 – 2:45 The evolving native plant industry in Saskatchewan.
Nora Stewart and Andy Hammermeister, Native Plant
Society of Saskatchewan..... 115

2:45 – 3:05 Cameco, Key Lake greening project, in harmony with nature -
(1978-1999 & beyond).
Lotfi Haji, Cameco..... n/a

3:05 – 3:25 Rare Plant Rescue During Pipeline Construction (*Erigeron*
compositus Pursh. var. *glabratus* Macoun, Fern-leaf Fleabane on
the 1998 Foothills Pipe Lines Expansion Project.)
David Walker, Walker and Associates..... n/a

Session D: Soils and Restoration– Saskatchewan Room 'C'
Session Chair: Mike Solohub – Department of Soil Science,
University of Saskatchewan

1:45 - 2:05 Soil information resources for the prairies.
Alvin Anderson and Glenn Padbury, Agriculture and
Agri-Food Canada n/a

2:05 – 2:25 Setting reclamation standards: When is soil decompacted?
Richard Johnson, Alberta Research Council..... 175

2:25 – 2:45 Using oily waste to restore productivity in a severely eroded
loamy sand.
M.C.P. Jarvis^{1,3}, V.O. Biederbeck², K.G. Hanson², T.A.
Fonstad³ ;¹ Imperial Oil Resources, ² Semiarid Prairie
Agricultural Center, and ³, University of Saskatchewan 68

2:45 – 3:05 Remediation of potash slime tails through use of cross-linked
polyacrylamide hydrogel.
Kathleen Cameron, University of Saskatchewan..... 169

3:05 – 3:25 Fifteen years of subsoil/mine spoil development on a

reconstructed profile.

Danielle Bailey and Donald Pluth, University of Alberta..... 174

3:25 – 4:00 Refreshments

4:00 CLRA National Annual General Meeting – Sask. Room ‘C’

5:30 – 6:30 Cocktail Hour – Saskatchewan Room ‘B’

6:30 Banquet and Awards – Saskatchewan Room ‘B’

Awards

Banquet Presentation: New forms of work organization in the Canadian mining industry.

Dr. Bob Russell, Department of Sociology, University of Saskatchewan n/a

Thursday, September 30th

8:10 - 8:15 Announcements

8:15 - 10:00 Alberta Policy – Saskatchewan Room ‘B’
Session Chair: Steven Deugau – Knox Resources Inc.

8:15 - 8:35 Development and status of reclamation certification criteria in Alberta.
Chris Powter, Alberta Environmental Protection..... 18

8:35 - 8:55 Pipeline reclamation certification standards - a capability assessment approach.
Al Fedkenheuer, TransCanada Transmission Ltd. 24

8:55 - 9:15 Alberta's new native plant guidelines.
Heather Gerling, Alta. Agric. Food and Rural Dev. 31

9:15 - 9:35 Alberta's orphan well program.
Pat Foo, Alberta Energy and Utilities Board 39

9:35 – 9:55 Qualified reclamation practitioners in Alberta.
David Lloyd, Alberta Environmental Protection 40

9:55 – 10:30 Refreshments

10:30 – 12:00 Focus Sessions (Plenary) – Saskatchewan Room ‘B’
Session Chair: Kerby Loewen – Prairie Seeds Inc.

10:30 – 11:15 1)The Great Sandhills
Planning and development authority for Saskatchewan Rural Municipalities and planning districts.
Ralph Leibel, Saskatchewan Municipal Government..... 128

	Use of ecological management planning in Western Saskatchewan Wayne Pepper and Jim Ireland, ERIN Consulting Ltd.	136
11:15 – 12:00	2) Focus Session - Legal Considerations in the Environmental Sector Julian Bodnar, Barrister and Solicitor (Stevenson Gillis Hjelte Tangjerd).....	n/a
	Gary Meschishnick, Barristor and Solicitor Wallace Meschishnick Clackson Zawada	n/a
12:00 – 1:30	Lunch – Saskatchewan Room ‘A’	
1:30 – 3:10	Concurrent Sessions	
Session A:	Remediation – Saskatchewan Room ‘C’ Session Chair: Lisa Groves – EnviroTest Labs	
1:30 – 1:50	Phytoremediation as an in-situ technique for the restoration of oil-contaminated sites. C.M. Frick, J.J. Germida, and R.E. Farrell, University of Saskatchewan	95
1:50 – 2:10	Integration of toxicity testing and chemical analyses for site assessment and remediation. Deib Birkholz, Enviro-Test Laboratories and Stephen Goudey, HydroQual Laboritories Ltd.	98
2:10 – 2:30	Evaluating soil amendments for brine spill remediation. Ken Greer, Western Ag. Consulting and Jeff Schoenau, University of Saskatchewan	n/a
2:30 – 2:50	Decommissioning and reclamation of an abandoned herbicide plant. Ralph Bock, Saskatchewan Environment and Resource Management	n/a
2:50 – 3:10	Surface water management with the Little River Pond Mill. Kathleen Cameron, Sunset Solar Systems Ltd.....	99
Session B:	Ecosystem Restoration – Saskatchewan Room ‘B’ Session Chair: Corinne Tchorzewski – Saskatchewan Environment and Resource Management, Sustainable Land Management Branch	
1:30 – 1:50	Physical restoration of the Kingsmere River in Prince Albert National Park. Michael Fitzsimmons, Prince Albert National Park and Guy Melville, Saskatchewan Research Council	138
1:50 – 2:10	Fire management for Prince Albert National Park - planned and random ignition prescribed burns.	

	Jeff Weir, Prince Albert National Park	141
2:10 – 2:30	Ecosystem management applied to riparian and aquatic habitat restoration. Karl Lauten, Saskatchewan Environment and Resource Management	144
2:30 – 2:50	Working relationship of SERM and industry in the West Boreal EcoRegion of Saskatchewan. Randy Slater, Saskatchewan Environment and Resource Management; Stan McBride, Wascana; and Shawn Daschuk, NESL	n/a
2:50 – 3:10	Composite Tailings (CT) reclamation research & development at Syncrude Canada Limited's oilsands mining operation. Clara Qualizza, Syncrude Canada Ltd.	n/a
3:10 – 3:30	Refreshments	
3:30 - 4:40	Social and Forestry Issues – Plenary – Sask. Room ‘B’ Session Chair: Sheila Lamont – Saskatchewan Conservation Data Centre	
3:30 – 3:50	Ecosystem based management in El Salvador. Jim Ireland and Wayne Pepper, ERIN Consulting Ltd.	154
3:50 – 4:10	Public participation in a multi-stakeholder process. Mark Liskowich, Northern Mines Monitoring Secretariat	156
4:10 – 4:30	Innovative regeneration applications to reclaim harvested sites in the boreal forest. Derek Sidders, Canadian Forest Service	n/a
4:30 – 4:40	Closing Remarks – Saskatchewan Room ‘B’	